

# Key Changes and Updates to the 2017 – 2026 Montgomery County Comprehensive Water Supply and Sewerage Systems Plan (The Ten-Year Plan)

Listed below are an overall summary of changes and updates included in the draft 2017-2026 Ten-Year Plan when compared to the adopted current Plan.

## ***Chapter 1: OBJECTIVES AND POLICIES***

This chapter includes an introduction to the Comprehensive Water Supply and Sewerage Systems Plan, identifying its purpose, legal context, and governance issues. This chapter includes both general and special-condition policies that have been adopted by the County Council for the designation of community water and sewer service areas, which regulate water and sewerage system extensions, connections, and their staging.

The update of Chapter 1 continues a process of reorganization to assist those using the Plan. The preceding changes are largely structural to the Plan, moving sections together with a common theme to provide for clarity, better continuity, and less redundancy. Chapter 1 incorporates text amendments approved by the County since adoption of the prior Plan update. Chapter 1 also provides new information, policy directions, and recommendations, as follow:

- **New General Comments:**
  - Added information addressing MDE's Septic Growth Tiers program as it relates to sewerage system planning and the County's development review program.
  - Removed requirements for dry system mains; and established that all subdivisions within service area categories 1 and 3 will use community service, rather than interim permit individual onsite systems.
- **Updates to General Policies for Water and Sewer Service (Section II.F.):**
  - Substantially reorganized and revised the general policy sections to better align water and sewer service policies with zoning and land use types (residential, rural, commercial, etc.) Each major section offers some background explanation or rationale for the various service policies.
  - Added text to address the Water Resources Functional Plan; new since the 2003 Plan update.
- **Updates to Special Policies for Water and Sewer Service (Section II.G.):**
  - Moved information on specific master plan policy recommendations, formerly in a table in this chapter, to Appendix C.
  - Revised and restructured the discussion of community service to address area-wide well and septic system problems, based in part on interest on the part of citizen groups, other agency staff, and the Council to expand and clarify this discussion. Introduced the concept of a "*special sewer service area*", to replace a "public health problem area". Some material was adapted from the sanitary survey language adopted in 2016 for the Glen Hills service policies text amendment.
  - Expanded the discussion of the policies addressing community service for properties abutting community service mains, including non-abutting service connections and
  - For the Community Service for Private Institutional Facilities (PIF) policy:
    - Added an explanation about dedicated low-pressure sewer mains with respect to abutting properties not eligible for community sewer service.
    - Added the Council's adopted exclusion of community service for PIF uses in the AR Zone.

- Added application requirements for PIF-based category change requests, including submittal of a concept plan.
  - Added a requirement calling for the Council's reconsideration of PIF-based category changes in cases where the PIF user subsequently and significantly changes a concept plan upon which the Council's original category change action was based.
- For the Piney Branch Restricted Sewer Service Area policy, added language addressing the application of health problem study areas to the policy and the covenants required for community sewer service under the Piney Branch Sewer Agreement Recommendations
- **Updates to WSSC Facility Planning Process (Section III.A.5.):**
  - Added text provided by WSSC to address new aspects of the facility planning process, including WSSC's Asset Management Program.
- **Updates to Replacement and Repair of Aging Community Systems (Section III.A.6.):**
  - Added a discussion of the issues involved with replacement and/or rehabilitation of community systems reaching the end of their useful lifespans.
- **Updates to Individual Systems (Section III.C.):**
  - Expanded the discussion of individual onsite systems, adding three new subsections providing information on wells, septic systems, and onsite systems problems.
  - Added the Council's adopted limitation on multiuse septic system design capacity for properties located in the AR Zone (formerly, the RDT Zone).
- **Updates to Administrative Delegation Policies (Section V.D.2.b.):**
  - Removed language allowing for approval of community water service for child lots and for denial of Plan amendments through the administrative delegation process.
- **Updates to Conditionally Approved Amendments (Section V.E.2.):**
  - Added a policy addressing conditionally-approved water and sewer category change amendments that lack a final approval action. The conditional approval will sunset five years from the date of the original category change action. A five-year optional extension is also provided.
- **Updates to Deferred Amendments (Section V.E.3.):**
  - Extended from 30 to 120 days the time elapsed since a deferred Plan amendment was last considered by the County Council that will require a new public notice for continued consideration (at the request of County Council staff).
- **New Policy Initiatives and Program Recommendations:** Included in this updated draft version of the Plan's Chapter 1, the following policy and program recommendations have been presented for considerations and include:
  - ❖ Added a new section to address service policies for municipalities, including a recommendation for the County and City to address Rockville's annexation process for properties currently using wells and septic systems. (Section II.F.)
  - ❖ Added a section discussing comprehensive management program for individual onsite systems and a recommendation that the County explore such a program. Included

- information on OLO's recent report, "Life Cycle Regulation for On-Site Wastewater Treatment Systems." (Section III.A.6)
- ❖ Added a new section that addresses problems with the WSSC-Built Main Extension program and recommends that the County pursue a replacement program to better allocate extension costs to all those benefitting or potentially benefitting from new service (Section IV.A.2.c.).

## **Chapter 2: GENERAL BACKGROUND**

Chapter 2 provides an overview of the natural and cultural environments in Montgomery County. Updated new information in this chapter include:

- Updates to the County's current (2011-2015) ratings of stream conditions based on biological monitoring.
- Updates to the National Pollutant Discharge Elimination System (NPDES) Municipal Separate Storm Sewer System Permit Program (AKA the MS4 Permit Program).
- Updates to Population dynamics and forecasting. The latest forecasts (Round 8.4 Cooperative Forecasting) of population, households, and employment were developed and published by MWCOC in October 2015 through a cooperative process involving the Council of Governments, its member jurisdictions, the Baltimore region, the states and other planning agencies.

## **Chapter 3: WATER SUPPLY SYSTEMS**

This chapter contains information about the various aspects of the county's water supply systems; including water supply sources, treatment, and distribution systems. Updated new information in this chapter include:

- **Updates to Projected Water Supply Demand:** Based on analysis of the latest water production and consumption data, WSSC has also developed the following water demand per unit to be used for growth projections and planning water system improvements:
  - Single-Family Dwelling Unit (SFDU):-----177.0 gallons per day (gpd)
  - Employees:-----36.1 gpd
  - Multi-Family Dwelling Unit (MFDU):-----146.8 gpd

The above numbers have been developed using COG/M-NCPPC Round 8.1 population forecasts.

- **Updates to Projected Water Supply System Needs:** The followings include major WSSC's current and planned studies and facilities needed to meet the projected treatment capacity at each of its water treatment plants.
  - Potomac Solids Handling
  - Source Water Protection
  - Potomac Basin Corrosion Mitigation Project
  - Potomac Submerged Channel Raw Water Intake:
  - Patuxent Water Treatment Plant Replacement and Expansion
  - Drought Planning:
  - Germantown/Clarksburg Area Projects:
  - Standpipe Replacement Projects:

- **Updates to Tables, Figures, Graphics, and other Technical Data:** All the tables, figures, and graphics contained in the current approved Plan have been updated to reflect the latest data, information, and trends. These include:
  - Water Service Area Category Maps
  - Water Service Area maps
  - Planning areas and pressure zones
  - Water supply sources for each service area
  - Well problem areas
  - Inventory of existing impounded water supplies
  - Existing and projected water supply demands, trends, and planned capacities for each service area (WSSD, City of Rockville, and the Town of Poolesville)
  - Inventory of existing and approved Multi-Use Water Supply Systems
- **New Policy Initiatives and Program Recommendations:** Included in this updated draft version of the Plan, few policy and program recommendations have been presented on water supply for considerations and include:
  - ❖ **Potential Use of Travilah Quarry for Additional Raw Water Storage:** The Travilah Quarry, which could supply up to 17 billion gallons of raw water storage, within several miles of the Potomac Water Filtration Plant.
  - ❖ **Investing in Major Water Supply System Infrastructure:** The importance of additional investment in aging water supply system infrastructure has been emphasized.
  - ❖ **Local and Regional Water Conservation Programs:** In reference to local and regional water conservation programs, Chapter 3 urges the County's public agencies to lead by example with respect to water conservation measures. These conservation efforts are promoted by several mechanisms that require continued review and evaluation to be effective. Plumbing codes, water rates and unaccounted water use emphasized as key factors in ensuring efficient use of water resources for water supply needs.

## **Chapter 4: SEWERAGE SYSTEMS**

This Chapter describes the county's existing and planned community and private, individual sewerage systems. Main focus and updates included in this chapter include:

- **Updates to Wastewater Flow Analysis and Projections:** The updated wastewater flow projections used in this Chapter are developed on a 5-year intervals and are based on Round 8.1 Cooperative demographic forecasts and WSSC's latest wastewater flow factors. Wastewater flow forecasts are developed from detailed analyses of existing flow records and projected additional future flow based on projected demographics, wastewater flow per household and per employment, and other factors such as infiltration (extraneous groundwater) and inflow from rainfall. Population forecasting and flow projection are based on the best available data at the time the analysis is conducted.
- **Updates to Planned Sewerage System Needs:** Based on the latest population projections and using Wastewater System Modeling, WSSC identifies the potential impact of current and future wastewater flows on sewerage system capacities. The Wastewater System Modeling is also used to identify collection system needs such as capacity constraint due to insufficient capacity for present and/or future wastewater flows and plan needed improvements.

Updates to planned sewerage systems based on the latest flow analysis for each service area and individual sewer basin include:

- **Blue Plains Service Area:** Approximately 85% of the municipal wastewater generated in Montgomery County is treated at the Blue Plains WWTP. This service area encompasses much of the central and eastern part of the county which includes Muddy Branch, Rock Creek, Watts Branch, Cabin John Creek, Rock Run, Little Falls Branch, Northwest Branch, Paint Branch, and Sligo Creek Basins. The Blue Plains service area also includes the Rockville Sanitary District.
  - Projected Treatment Capacity Needs: Produced by WSSC and based on COG's Round 8.1 Cooperative demographic forecasts and WSSC's latest wastewater flow factors. The County's projected wastewater treatment needs within the Blue Plains service area will be met well beyond the year 2025.
  - Projected Transmission and Conveyance Needs: Projected needs for all sewersheds discharging to the Blue Plains WWTP are listed below. These projections are based on COG's Round 8.1 Cooperative demographic forecasts and WSSC's latest wastewater flow factors.
    - I. Muddy Branch - 7,500 feet of trunk sewers along the main stem in Muddy Branch may have capacity constraints under 2025 wet weather conditions.
    - II. Watts Branch - Basin's conveyance facilities will be able to handle the basin's anticipated wastewater flows through the year 2025
    - III. Rock Run - 5,495 feet along the main stem of Rock Run Branch may have capacity constraints under 2025 wet weather conditions.
    - IV. Cabin John - 3,300 feet of relief sewer along Cabin John Creek near River Road and the Capital Beltway may have capacity constraints under 2025 wet weather conditions.
    - V. Rock Creek – Capacity constraints under 2025 wet weather conditions near Reddy Branch Wastewater Pumping Station and a tributary to Mill Creek Branch
    - VI. Little Falls - Based on the latest WSSC wastewater flow, it has been determined that the Little Falls trunk sewer has adequate capacity to receive the projected wastewater flows through 2025.
    - VII. Anacostia Interceptor System – Flows discharged into Anacostia Interceptor System from Montgomery County include Sligo Creek Basin, Northwest Branch Basin, and Paint Branch Basin - Much of the development potential in Sligo Creek is limited to redevelopment of existing commercial areas, such as the downtown areas of Silver Spring and Wheaton. Although, the basin is identified as a Potential Overflow Basin, WSSC does not anticipate future sewage capacity constraints or overflows within Montgomery County. The Northwest Branch Basin is currently identified as a Potential Overflow Basin. A small length of gravity sewer (about 200 feet) is identified as having capacity constraints under projected future wet weather conditions. Major sewer lines in Paint Branch Basin have adequate capacity at present, and there are no planned CIP projects in this basin. However, considerable growth is expected to occur in this area along the U.S. Route 29 corridor. WSSC has determined through its sewer modeling that that 17,000 feet of sewer in the Paint Branch basin within Montgomery County will have capacity constraints under projected future wet weather flow conditions.



- **Seneca Service Area:** - Projected flows based on forecasted population and other flow factors for the Seneca Service Area have been developed by the WSSC and are based on Round 8.1 Cooperative demographic forecasts. The basin has been one of the most active basins in the County in providing new wastewater services during recent years. There are a number of active projects in this service area to address wastewater conveyance constraints/needs and improve service in the Seneca Creek Basin. The Seneca WWTP has adequate capacity to treat the 2025 projected flows.
  - **Damascus Service Area:** - Projected flows based on demographic forecasts and other flow factors for the Damascus Service Area indicate that existing treatment facility will handle all expected wastewater flows from this service area for the foreseeable future.
  - **Poolesville Service Area:** - The Town of Poolesville has developed a Wastewater Capacity Management Plan. The Plan utilizes a three-year rolling average of discharge flows from the WWTP to determine the available capacity for development allocation.
- **Updates to Sanitary Sewer Overflows Consent Decree:** In December 2005, the Washington Suburban Sanitary Commission (WSSC) entered into a Consent Decree with the U.S. Environmental Protection Agency (EPA), the State of Maryland and four Citizen Groups on an action plan to significantly minimize, and eliminate where possible, sanitary sewer overflows (SSOs). The Citizens Groups were the Natural Resources Defense Council (NRDC), the Anacostia Watershed Society (AWS), the Friends of Sligo Creek (FOSC), and the Audubon Natural Society. On January 19, 2006, the Court entered the First Amendment to the Consent Decree to add Patuxent Riverkeeper to the definition of Citizens Groups. The sanitary sewer system is being inspected and rehabilitated. The agreement estimates approximately \$1.3 billion in improvements to the WSSC's wastewater collection system, provides \$4.4 million for additional environmental improvement projects and includes a \$1.1 million civil penalty.

A short description of the requirements of the Consent Decree and additional details regarding the current status and the remedial measures progress to date have been provided in the Plan.

- **Updates to Biosolids Management:** - WSSC has recently completed a major facility planning study to explore and determine the best alternative in managing its future biosolids produced from all of its wastewater treatment plants within both Montgomery and Prince George's counties.

The focus of this facility plan was to examine and develop a comprehensive program providing for the best alternative to process biosolids in a manner that is environmentally beneficial and is also economically feasible. The recommended and approved alternative included the design and construction of a central bio-energy project comprised of Thermal Hydrolysis, Mesophilic Anaerobic Digestion, and Combined Heat and Power facilities. The project is currently at the preliminary design stage and the expected completion date has been scheduled for the year 2021. When complete, some of the expected environmental and economic benefits would include:

- Significant reduction in biosolids quantity.
- Production of digester gas as renewable fuel which will be used to produce heat and electric power.
- Producing high quality (Class-A) biosolids which can be used more widely than the Class-B biosolids currently produced.

As part of their updated Biosolids Management Program (BMP), the DC-Water is currently at the final phases of constructing major facilities to upgrade its biosolids processing and management practices. The upgraded biosolids processing plant when complete will largely replace the current

lime stabilization with thermal hydrolysis and anaerobic digestion.

- **Updates to Tables, Figures, Graphics, and other Technical Data:** All the tables, figures, and graphics contained in the current approved Plan have been updated to reflect the latest data, information, and trends. These include:
  - Wastewater Service Area Category Map for Montgomery County
  - Wastewater Service Area district maps
  - Planning areas and sewersheds
  - Projected Transmission and Conveyance Needs for individual sewersheds
  - Wastewater treatment plant service area maps
  - Projected wastewater treatment capacity needs for all wastewater treatment plants
  - Current and projected safe capacities for all wastewater pumping stations
  - Individual sewershed maps
  - Existing and projected wastewater flows for individual sewersheds
  - Projected facility needs for individual sewersheds
  - Projected facility needs for all districts and treatment service areas
  - Inventory of existing and approved Multi-Use sewerage systems
- **New Policy Initiatives and Program Recommendations:** Included in this updated draft version of the Plan, few policy and program recommendations relative to County's Sewerage systems have been presented for considerations and include:
  - ❖ **WSSC - IMA Allocated Flow Capacity and Related Nitrogen and Phosphorus Load Allocations at the Blue Plains WWTP:** WSSC use of IMA allocated flow capacity of 169.6 MGD at the Blue Plains Wastewater Treatment Plant has been reduced to 163.6 MGD due to diversion of nitrogen and phosphorus load allocations (loads associated with 6 MGD) at the WSSC's Seneca Wastewater Treatment Plant. WSSC should initiate a process to explore the possibilities of restoring the full WSSC's allocated capacity in the Blue Plains Wastewater Treatment Plant.
  - ❖ **County to Develop Program Addressing the Potential Sanitation Problems from Aging Individual, On-Site Systems in the County's Neighborhoods:** The County should create, budget, and implement appropriate programs to research, prioritize, and address the potential sanitation problems from aging individual, on-site systems facing the County's neighborhoods. This will be especially important for rural neighborhoods located outside the effective/efficient reach of community water and sewerage systems. Solving the concerns about older neighborhoods using individual on-site systems may require new and innovative solutions beyond the usual provision of community water and/or sewer service. These may include, but are not limited to:
    - I. Proactive, periodic on-site systems maintenance and inspection programs coordinated with public outreach and education on individual systems maintenance;
    - II. Alternative community distribution, collection and treatment systems;
    - III. Shared water and/or sewerage systems, owned by local communities and operated by authorized agencies or utilities
    - IV. Alternative financing for relief systems (community or otherwise), including but not limited to special assessment districts, grants or loans from government resources, or utility assistance programs;
    - V. Programs to assist lower-income individuals and communities in financing required relief systems.